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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,711	07/10/2006	Paolo Falcioni	108041-19	4344
7590 Patricia A. Sheehan Cesari and McKenna, LLP 88 Black Falcon Avenue Boston, MA 02210				
EXAMINER				
CURTIS III, CHARLES G				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/585,711

Applicant(s)

FALCIONI ET AL.

Examiner

Charles G. Curtis III

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-48 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 30-48 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 23 September 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/5508)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date _____

DETAILED ACTION

Status of the Claims

1. The preliminary amendment filed on July 10, 2006 has cancelled original claims 1-29 and added new claims 30-48, therefore, claims 30-48 are pending for examination.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed with the European Patent Office on July 11th, 2005. It is noted, however, that applicant has not filed a certified copy of the EP 05425500.5 application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claim 45** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 45, the statement that “the first interface means is an electronic cable to the communication means” renders the claim indefinite, since the parent claim states that the first interface means connects to internal and external sensors. Since Examiner cannot determine what it is meant by the limitation introduced by this claim, it will be assumed for the purposes of examination that Applicants are stating that the first interface means is connected by an electronic cable to the communication means.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. **Claims 30-48** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharood et al. (hereinafter "Sharood" - U.S. Patent No. 6,453,687) in view of Primm et al. (hereinafter "Primm" - U.S. Patent Application Publication No. 2002/0124081).

Regarding claim 30, Sharood discloses a monitoring device for use with a household electric appliance (retrofit plug 125, figures 6A-6D), the monitoring device comprising:

- i. a read and write memory (as part of the measure and transmit circuitry 620, column 9 lines 13-16);
- ii. a first interface means (serial port or other communications interface, column 10 lines 33-35);

- iii. a means for measuring at least one electric quantity by measuring an electric current running through the monitoring device (via current transformer 610, column 9 lines 6-12);
- iv. a microcontroller to process measurements of the one or more physical quantities and the at least one electric quantity to determine at least one piece of information relating to the household electric appliance (column 9 lines 13-28); and
- v. a second interface means (the communications circuit) to send the at least one piece of information to a remote center (column 9 lines 42-55).

Sharood does not disclose one or more sensors for measuring one or more physical quantities of the household electric appliance that connect to the first interface means.

However, the preceding limitations are known in the art of communications. Primm discloses a method and system for remote monitoring of network appliances, wherein one or more sensors measure physical quantities pertaining to the operation of the appliance (paragraphs [0105] and [0109]). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the device disclosed in Sharood with the addition of one or more sensors for measuring physical quantities of the appliance as the suggestion lies in Sharood that the serial port or other communications interface can be used to connect to another sensor to provide additional data about the appliance which can be remotely monitored (column 10 lines 35-39) which increases the operability of the monitoring device.

Regarding claim 31, Sharood in view of Primm discloses the device of claim 30 as discussed above. The combination further discloses a wireless communication device within the first interface means, the wireless communication device communicating with at least one

internal sensor within the household electric appliance where the at least one internal sensor measures a second physical quantity of an internal part of the household device (Primm, paragraph [0109]) and that the microcontroller further processes the measurements of the second physical quantity (Sharood, column 10 lines 37-39 and column 9 lines 47-52).

Regarding claim 32, Sharood in view of Primm discloses the device of claim 30 as discussed above. Sharood further discloses that the at least one piece of information includes at least one of: functional information, statistical information, and diagnostic information, relating to the household electric appliance (column 9 line 64 – column 10 line 8).

Regarding claim 33, Sharood in view of Primm discloses the device of claim 30 as discussed above. Primm further discloses that the device comprises a timing unit, where the timing unit allows an instant time to be associated with the measurements of the one or more physical quantities and at least one electrical quantity (paragraph [0115]).

Regarding claim 34, Sharood in view of Primm discloses the device of claim 30 as discussed above. Sharood further discloses that the at least one electrical quantity includes at least one of the following: momentary electric current drawn by the household electric appliance, line voltage applied to the household electric appliance, momentary electric power drawn by the household electric appliance, electric energy consumption of the household electric appliance within a predefined time period, a power factor of the load represented by the household electric appliance, $\cos(\phi)$ of the load represented by the household electric appliance, and type of reactive power of the load represented by the household electric appliance (column 9 lines 24-28).

Regarding claim 35, Sharood in view of Primm discloses the device of claim 30 as

discussed above. Primm further discloses that the first interface is connected to the one or more sensors through a wireless connection (paragraph [0109] lines 20-25).

Regarding claim 36, Sharood in view of Primm discloses the device of claim 30 as discussed above. Sharood further discloses that the second interface means is connected to the remote center through a wireless connection (column 10 lines 40-45).

Regarding claim 37, Sharood in view of Primm discloses the device of claim 30 as discussed above. Sharood further discloses that the household electric appliance includes one of: a clothes dryer, a washing/drying machine, a dishwasher, a refrigerator, a freezer, a refrigerator/freezer, an electric oven, a gas oven, a microwave oven, a gas cooking top, an electric cooking top, a magnetic induction cooking top, a kitchen hood, a conditioner, a gas boiler, an electric water heater, an air conditioner, a hair dryer, an iron, a Hi-Fi system, a mixer or any other electric kitchenware, a lighting device, an alarm device (column 9 line 64 – column 10 line 8 and column 10 lines 54-55).

Regarding claim 38, Sharood in view of Primm discloses the device of claim 30 as discussed above. Primm further discloses that the one or more physical quantities includes at least one of: temperature, flow rate, conductivity, weight, absolute humidity, relative humidity, pressure, linear displacement, linear velocity, linear acceleration, angular displacement, angular velocity, angular acceleration, chemical concentration, sound pressure, sound intensity, light intensity, oscillation frequency, and oscillation amplitude (paragraph [0109] lines 1-5).

Regarding claim 39, Sharood in view of Primm discloses the device of claim 30 as discussed above. Sharood further discloses that the device comprises an information storage means for storing the at least one piece of information in the read and write memory (column 9

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lines 29-30).

Regarding claim 40, Sharood in view of Primm discloses the device of claim 30 as discussed above. Sharood further discloses that the household electric appliance is one of a laundry washing machine and a washing/drying machine adapted to perform at least one wash treatment on textile items, the one or more physical quantities being preferably at least one of the following: weight of the textile items being present in the basket of the washing machine or the washing/drying machine, flow rate of water supplied to the washing machine or the washing/drying machine, temperature of washing liquid contained in a tub of the washing machine or the washing/drying machine, and conductivity of the washing liquid drained by the washing machine or the washing/drying machine, where the washing liquid comprises water and at least one washing agent (column 10 lines 2-3).

Regarding claim 41, Sharood discloses a monitoring device for use with a household electric appliance, the monitoring device comprising:

- i. a read and write memory (as part of the measure and transmit circuitry 620, column 9 lines 13-16);
- ii. a first interface means (serial port or other communications interface, column 10 lines 33-35);
- iii. a means for measuring at least one electric quantity by measuring an electric current running through the monitoring device (via current transformer 610, column 9 lines 6-12);
- iv. a microcontroller to process measurements of the one or more physical quantities and the at least one electric quantity to determine at least one piece of information relating

- to the household electric appliance (column 9 lines 13-28), where the at least one piece of information includes at least one of functional information, statistical information, and diagnostic information relating to the household electric appliance (column 9 line 64 – column 10 line 8);
- v. an information storage means for storing the at least one piece of information in the read and write memory (column 9 lines 29-30); and
 - vi. a second interface means (the communications circuit) to send the at least one piece of information to a remote center (column 9 lines 42-55).

Sharood does not disclose one or more external sensors and one or more internal sensors for measuring one or more physical quantities of the household electric appliance, where the one or more internal sensors are connected to the first interface means through a communication means directly connected the one or more internal sensors.

However, the preceding limitations are known in the art of communications. Primm discloses a method and system for remote monitoring of network appliances, wherein one or more internal and/or external sensors measure physical quantities pertaining to the operation of the appliance (paragraphs [0105] and [0109]). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the device disclosed in Sharood with the addition of one or more sensors for measuring physical quantities of the appliance as the suggestion lies in Sharood that the serial port or other communications interface can be used to connect to another sensor to provide additional data about the appliance which can be remotely monitored (column 10 lines 35-39) which increases the operability of the monitoring device.

Regarding claim 42, Sharood in view of Primm discloses the device of claim 41 as

discussed above. Primm further discloses that the first interface means is an electric cable to the one or more external sensors (paragraph [0109] line 16).

Regarding claim 43, Sharood in view of Primm discloses the device of claim 41 as discussed above. Sharood, in another embodiment of the disclosed invention, teaches that the first interface means (and associated sensor) and monitoring device can be separate units and that the first interface means (and associated sensor) can be connected to the monitoring device (and therefore communication means) by another interface (element 2704, figure 27B and column 28 lines 65-67). It would have been obvious to one of ordinary skill in the art at the time on the invention to use a wireless connection as the interface to reduce the amount of cabling used thereby making it easier to connect the sensor to the monitoring device and increasing the ease of installation and modification (i.e. not limited to a certain cable length).

Regarding claim 44, Sharood in view of Primm discloses the device of claim 41 as discussed above. Primm further discloses that the first interface means is wirelessly connected to the one or more external sensors (paragraph [0109] lines 20-25).

Regarding claim 45, Sharood in view of Primm discloses the device of claim 41 as discussed above. Sharood further discloses that the first interface means is connected by an electronic cable to the communication means (it is inherent to the disclosure and well-known in the art that different electronic and circuit components within a device are connected by some sort of cable or wiring means).

Regarding claim 46, Sharood in view of Primm discloses the device of claim 41 as discussed above. Sharood further discloses that the communication means and the one or more internal sensors are connected through an electronic control means (measure and transmit circuit

620), where the electronic control means collect, stores, and processes the measurements from the one or more physical quantities from the one or more internal sensors (column 9 lines 29-41).

Regarding claim 47, Sharood discloses a system for monitoring a household electric appliance, the system comprising:

- i. the household electric appliance;
- ii. an electronic control means, the electronic control means configured to collect, store, and process measurements (measure and transmit circuitry 620, column 9 lines 13-28);
- iii. a communication means communicating with the electronic control means to transfer the measurements of the one or more physical internal quantities to a first interface means on a monitoring device (column 9 lines 42-55);
- iv. the monitoring device including,
 - a) a read and write memory (as part of the measure and transmit circuitry 620, column 9 lines 13-16),
 - b) the first interface means to connect to the one or more external sensors and the communication means to receive the measurements of the one or more physical external quantities and the one or more physical internal quantities
(The additional data can be transmitted to a remote monitoring device using the PLC network, column 10 lines 37-39),
 - c) a means for measuring at least one electric quantity by measuring an electric current running through the monitoring device (via current transformer 610, column 9 lines 6-12),

- d) a microcontroller to process the measurements of the one or more physical external quantities, one or more physical internal quantities, the at least one electric quantity to determine at least one piece of information relating to the household electric appliance (column 9 lines 13-28), where the at least one piece of information includes at least one of: functional information, statistical information, and diagnostic information relating to the household electric appliance (column 9 line 64 – column 10 line 8), and
- e) a second interface means to send the at least one piece of information to a remote center (the communications circuit, column 9 lines 42-55); and
- v. the remote center to collect the at least one piece of information from one or more monitoring devices connected to respective household electric appliances and to extract statistical information about the household electric appliances being monitored (column 9 line 64 – column 10 line 8).

Sharood does not disclose that the electronic control means is connected to one or more internal sensors, where the one or more internal sensors measure one or more physical internal quantities of the household electric appliance, or one or more external sensors to measure one or more physical external quantities of the household electric appliance, or that the monitoring device includes a timing unit to associate an instant time with the measurements of the one or more physical quantities and the at least one electric quantity.

However, the preceding limitations are known in the art of communications. Primm teaches a method and system for remote monitoring of network appliances, wherein one or more sensors, which may be internal or external to the appliance, measure physical quantities

pertaining to the operation of the appliance (paragraphs [0105] and [0109]), and also teaches that a clock may be used to establish a time at which a particular measurement is taken (paragraph [0115]). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the system of Sharood with the additional features disclosed in Primm as the suggestion lies in Sharood that the serial port or other communications interface can be used to connect to another sensor to provide additional data about the appliance which can be remotely monitored (column 10 lines 35-39) which increases the operability of the monitoring device, and using a timing unit to associate a time stamp with the measurement is a cumulative feature which also increases operability by permitting a user to know when a condition occurred or for how long it has occurred (i.e. in the case of a refrigerator, how long the temperature has been above a certain threshold which could help determine if food spoilage has occurred).

Regarding claim 48, Sharood in view of Primm discloses the system of claim 47 as discussed above. Sharood further discloses that the remote center receives a plurality of information sent by the monitoring device that the remote center collects and sorts for the purpose of identifying at least one parameter related to the use of a washing machine or a washing/drying machine, the at least one parameter being preferably at least one of the following: number of wash treatments performed by the washing machine or the washing/drying machine within a predefined time interval, quantity and typology of textile items loaded on average by a user for each wash treatment, quantity and typology of washing agents loaded on average by the user for each wash treatment, average quantity of water used by the washing machine or the washing/drying machine for each wash treatment, and average electric energy absorbed by the washing machine or the washing/drying machine for each wash treatment

(column 9 line 64 - column 10 line 8).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Sharood et al. (U.S. Patent Application Publication No. 2001/0025349) teaches a retrofit monitoring device, with similar disclosure to the Sharood patent cited above.
- Yoon et al. (U.S. Patent No. 6,956,461) teaches an apparatus and method for remotely controlling household appliances.
- Chapman Jr., et al. (U.S. Patent No. 7,188,002) discloses an appliance diagnostic display apparatus and network.
- Jung (U.S. Patent Application Publication No. 2006/0197667) discloses a method and system of providing electronic device information to a mobile station.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles G. Curtis III whose telephone number is (571)270-7493. The examiner can normally be reached on Monday - Friday 7:30 AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (571)272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Charles G Curtis III/
Examiner, Art Unit 2612

/Daniel Wu/
Supervisory Patent Examiner, Art Unit 2612